UNITED
NATIONS

ST

Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/1997/39
25 April 1997

Original: ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Thirteenth session,
Geneva, 7-17 July 1997,
agenda item (3 (c))

DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Other packaging and IBC matters

Metal IBCs: Design specification requirements

Transmitted by the Expert of the United Kingdom

Background:

At the twelfth session of the Sub-Committee of Experts (1-12 July 1996), the Expert from the United Kingdom presented proposals concerning the design specification requirements for metal IBCs (ST/SG/AC.10/C.3/R.716). In this document, he proposed that design type approval for metal IBCs be based on standard performance requirements as with all other packaging design types, rather than on material specifications or wall thickness. The Sub-Committee decided not to accept the proposals to delete the material specifications and most of the requirements relating to minimum wall thickness although it did accept a proposal in the document to delete part of the wall thickness requirements (16.2.3.2 in the ninth revised edition of the UN Recommendations).

The Expert from the United Kingdom still considers that the remaining specifications for materials of construction and the provisions relating to the minimum wall thickness for metal IBCs should be removed from the UN Recommendations for the following reasons.

Justification:

Intermediate Bulk Containers (IBCs) in Chapter 6 of the reformatted UN Recommendations must successfully pass a range of performance tests depending on the intended contents and methods of handling of the IBC. The determination of the suitability of a particular IBC for the transport of dangerous goods is based solely on the ability of that IBC successfully to pass the relevant performance tests.

The one exception to this general rule is in the construction requirements for metal IBCs, in which both materials of construction and minimum wall thickness provisions are specified. In this respect, the metal IBC provisions bear a resemblance to those for portable tanks in Chapter 6.6. However, material specifications and minimum thickness "design" requirements are anomalous for metal IBCs since IBC provisions are intended to be "performance standards". Unlike the "specification-based" portable tank provisions in Chapter 6.6, no material specifications or minimum wall thicknesses are prescribed for any type of packaging in the rest of Chapter 6, or for any other type of IBC. The reformatted text of Chapter 6 highlights the inconsistency in applying additional specification-based requirements only to metal IBCs.

There appears to be no technical or safety justification for specifying materials of construction and minimum wall thickness for metal IBCs when:

there are no equivalent requirements for any other type of IBC;

non-metallic IBCs are typically permitted to be used for the transport of the same substances, incremental increases in wall thickness are not required in direct proportion to capacity (eg. a 1 mm increase in minimum wall thickness may be required for a capacity increase of a few litres, while in other capacity ranges an increase of nearly 1,000 litres does not compel any increase in thickness);

the hydraulic test procedures are more stringent than for any other type of IBC and passing that test should ensure that the material used is of adequate strength and thickness in relation to the intended use of the IBC.

The United Kingdom believes that to impose additional "specification" requirements only on metal IBCs is fundamentally inconsistent with the philosophy underlying the packaging performance provisions in Chapter 6 and is not necessary to ensure the appropriate level of safety in transport.

Furthermore, it seems inappropriate to require a corrosion allowance which increases wall thickness above a minimum thickness that is no longer specified, considering the basic recommendation that all IBCs "should be constructed of materials compatible with their contents, or be protected internally" (7.5.1.5.3).

Moreover, such provisions needlessly stifle innovation in the use of metals of equivalent performance.

Proposal:

It is proposed that the specifications for materials of construction and the provisions relating to the minimum wall thickness for metal IBCs be removed from Chapter 6 of the Recommendations.

Namely, in the current text of Chapter 6, it is proposed to:

(a) Delete 6.5.3.1.5 and 6.5.3.1.6; and

(b) Add 6.5.3.1.3 to 6.5.3.1.2; renumber 6.5.3.1.4 and 6.5.3.1.7 as 6.5.3.1.3 and 6.5.3.1.4, respectively.